

SPACE OPERATIONS CONTROL CENTER

SATELLITE SITUATION REPORT

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GODDARD SPACE FLIGHT CENTER

GREENBELT, MD.

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SPACE OPERATIONS CONTROL CENTER  
GODDARD SPACE FLIGHT CENTER  
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

VOLUME 5, NO. 19

OCTOBER 15, 1965

SATELLITE SITUATION REPORT

THE FOLLOWING REPORT REFLECTS DATA COMPUTED AND COMPILED  
BY THE GODDARD SPACE FLIGHT CENTER, NORAD, AND SMITHSONIAN  
ASTROPHYSICAL OBSERVATORY AS OF 1200Z ON OCTOBER 15, 1965

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1958 LAUNCHES									
ALPHA 1	EXPLORER 1	004	US	1 FEB	104.0	33.17	1554	337	
BETA 1	ROCKET BODY	016	US	17 MAR	138.4	34.27	4319	649	
BETA 2	VANGUARD 1	005	US	17 MAR	134.0	34.23	3935	653	
BETA 3		1576	US	17 MAR	132.7	34.24	3823	656	
1959 LAUNCHES									
ALPHA 1	VANGUARD 2	011	US	17 FEB	125.4	32.88	3284	556	
ALPHA 2	ROCKET BODY	012	US	17 FEB	129.7	32.91	3657	555	
ETA 1	VANGUARD 3	020	US	18 SEP	129.8	33.32	3712	515	
MU 1	LUNIK 1	112	USSR	2 JAN	HELIOCENTRIC ORBIT				
NU 1	PIONEER 4	113	US	3 MAR	HELIOCENTRIC ORBIT				
IOTA 1	EXPLORER 7	022	US	13 OCT	101.1	50.35	1066	559	
IOTA 2	ROCKET BODY	023	US	13 OCT	100.9	50.38	1049	552	
1960 LAUNCHES									
ALPHA 1	PIONEER 5	027	US	11 MAR	HELIOCENTRIC ORBIT				
BETA 1	ROCKET BODY	028	US	1 APR	99.1	48.41	733	698	
BETA 2	TIROS 1	029	US	1 APR	99.2	48.44	741	698	
BETA 3	NONE	101	US	1 APR	97.9	48.48	696	616	
BETA 4	NONE	115	US	1 APR	99.9	48.16	806	698	
GAMMA 2	TRANSIT 1B	031	US	13 APR	93.6	51.24	554	346	
GAMMA 4	NONE	099	US	13 APR	96.7	51.28	722	480	
EPSILON 3	NONE	036	USSR	15 MAY	87.9	64.95	156	156	
ZETA 1	MIDAS 2	043	US	24 MAY	94.3	33.04	494	470	
ETA 1	TRANSIT 2A	045	US	22 JUN	101.6	66.71	1060	611	
ETA 2	GREB	046	US	22 JUN	101.6	66.73	1060	608	
ETA 3	ROCKET BODY	047	US	22 JUN	101.4	66.70	1042	609	
ETA 4		840	US	22 JUN	101.5	66.68	1052	611	
ETA 5		841	US	22 JUN	101.5	66.69	1053	608	

# OBJECTS IN ORBIT

TRANSMITTING  
FREQ. (MC/S)

PERIGEE  
Km.

APOGEE  
Km.

INCLI-  
NATION

PERIOD  
MINUTES

LAUNCH

SOURCE

CATALOGUE  
NUMBER

CODE NAME

OBJECT

## 1960 LAUNCHES (CONT'D)

IOTA 1	ECHO 1	049	US	12 AUG	113.5	47.27	1558	1215	
IOTA 2	ROCKET BODY	050	US	12 AUG	118.1	47.25	1686	1500	
IOTA 3	METAL OBJECT	051	US	12 AUG	118.2	47.30	1681	1522	
IOTA 4	METAL OBJECT	052	US	12 AUG	CURRENT	ELEMENTS NOT MAINTAINED			
IOTA 5	METAL ORJECT	053	US	12 AUG	118.4	47.33	1684	1536	
NU 1	COURIER 1B	058	US	4 OCT	107.0	28.32	1209	966	
NU 2	ROCKET BODY	059	US	'4 OCT	106.6	28.21	1211	920	
XI 1	EXPLORER 8	060	US	3 NOV	112.3	49.91	2237	422	
XI 2	ROCKET BODY	062	US	3 NOV	111.8	49.94	2194	420	
XI 3	NONE	069	US	3 NOV	108.7	49.38	1933	397	
XI 4	NONE	105	US	3 NOV	110.2	50.49	2051	419	
PI 1	TIROS 2	063	US	23 NOV	98.2	48.54	728	619	
PI 2	ROCKET BODY	064	US	23 NOV	98.1	48.55	725	609	
PI 3	NONE	074	US	23 NOV	98.1	48.51	719	620	
PI 4	NONE	075	US	23 NOV	98.3	48.50	733	619	

## 1961 LAUNCHES

ALPHA 1	SAMOS 2	070	US	31 JAN	94.7	97.38	542	467	
ALPHA 2	METAL OBJECT	079	US	31 JAN	94.6	97.37	534	466	
GAMMA 1	VENUS PROBE	080	USSR	12 FEB	HELIOCENTRIC ORBIT				
DELTA 2	ROCKET BODY	082	US	16 FEB	11.85	38.85	2596	630	
DELTA 3	NONE	085	US	16 FEB	CURRENT	ELEMENTS NOT MAINTAINED			
KAPPA 1	EXPLORER 10	098	US	25 MAR	POSITION	UNCERTAIN			
NU 1	EXPLORER 11	107	US	27 APR	107.9	28.76	1171	488	
OMICRON 1	TRANSIT 4A	116	US	29 JUN	103.8	66.85	1005	874	
OMICRON 2	INJUN-SR-3	117	US	29 JUN	103.8	66.84	1004	877	
OMICRON 3-208**	METAL OBJECTS		US	29 JUN					
RHO 1	TIROS 3	162	US	12 JUL	100.4	47.90	816	739	

\$54\$324\$150\$400

# OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)

## 1961 LAUNCHES (CONT'D)

RHO 2	ROCKET BODY	165	US	12 JUL	100.3	47.90	805	742	
RHO 3	METAL OBJECT	166	US	12 JUL	98.8	47.93	794	611	
RHO 4	METAL OBJECT	167	US	12 JUL	102.0	47.86	936	769	
SIGMA 1	MIDAS 3	163	US	12 JUL	161.5	91.23	3531	3360	
SIGMA 3	METAL OBJECT	188	US	12 JUL	161.1	91.21	3540	3324	
SIGMA 4	METAL OBJECT	196	US	12 JUL	161.9	91.22	3566	3358	
UPSILON 1	EXPLORER 12	170	US	16 AUG	CURRENT ELEMENTS NOT MAINTAINED				
A DELTA 1	MIDAS 4	192	US	21 OCT	156.0	95.85	3752	3501	
A DELTA 3	METAL OBJECT	194	US	21 OCT	155.6	95.81	3741	3481	
A DELTA 4	METAL OBJECT	195	US	21 OCT	166.4	95.84	3804	3483	
A ETA 1	TRANSIT 4B	202	US	15 NOV	105.8	32.42	1107	952	
A ETA 2	TRAAC	205	US	15 NOV	105.8	32.41	1107	953	
A ETA 3	ROCKET BODY	204	US	15 NOV	105.6	32.42	1095	950	

## 1962 LAUNCHES

ALPHA 1	RANGER 3	221	US	26 JAN	HELIOCENTRIC ORBIT				
ALPHA 2	ROCKET BODY	222	US	26 JAN	HELIOCENTRIC ORBIT				
BETA 1	TIRO 4	226	US	8 FEB	100.4	48.31	844	707	
BETA 2	ROCKET BODY	227	US	8 FEB	101.4	48.14	942	702	
BETA 3	METAL OBJECT	228	US	8 FEB	99.5	48.40	760	705	
BETA 4	METAL OBJECT	229	US	8 FEB	100.3	48.30	837	706	
ZETA 1	ORB. SOL. OBS. 1	255	US	7 MAR	96.0	32.83	584	549	
ZETA 2	ROCKET BODY	257	US	7 MAR	96.0	32.83	581	543	
KAPPA 1		271	US	9 APR	153.0	86.75	3411	2785	
KAPPA 3		273	US	9 APR	152.6	86.64	3369	2796	
KAPPA 4		274	US	9 APR	153.3	86.67	3422	2803	
MU 2	ROCKET BODY	282	US	23 APR	HELIOCENTRIC ORBIT				
OMICRON 1	ARIEL 1	285	US/UK	26 APR	100.4	53.90	1168	386	136.405
OMICRON 2	ROCKET BODY	288	US	26 APR	100.3	53.91	1153	388	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1962 LAUNCHES (CONT'D)									
A ALPHA 1	TIROS 5	309	US	19 JUN	100.5	58.15	969	593	
A ALPHA 2	ROCKET BODY	311	US	19 JUN	100.4	58.16	957	596	
A ALPHA 3	METAL OBJECT	312	US	19 JUN	101.7	58.20	1086	596	
A ALPHA 4	METAL OBJECT	313	US	19 JUN	99.1	57.99	852	579	
A EPSILON 1	TELSTAR 1	340	US	10 JUL	157.8	44.80	5650	938	
A EPSILON 2	ROCKET BODY	341	US	10 JUL	157.6	44.78	5630	944	
A OMICRON 1		369	US	23 AUG	99.5	98.70	858	616	
A OMICRON 2		370	US	23 AUG	98.2	98.63	750	600	
A OMICRON 3		378	US	23 AUG	100.8	98.76	974	620	
A OMICRON 4		388	US	23 AUG	99.5	98.70	856	616	
A RHO 1	MARINER 2	374	US	27 AUG	HELIOCENTRIC ORBIT				
A RHO 2	ROCKET BODY	375	US	27 AUG	HELIOCENTRIC ORBIT				
A PSI 1	TIROS 6	397	US	18 SEP	98.7	58.36	714	682	
A PSI 2	ROCKET BODY	398	US	18 SEP	98.7	58.36	709	680	
A PSI 3	METAL OBJECT	399	US	18 SEP	99.4	58.43	775	683	
A PSI 4	METAL OBJECT	400	US	18 SEP	98.0	58.22	688	641	
B ALPHA 1	ALOUETTE	424	CANADA	29 SEP	105.5	80.49	1036	999	
B ALPHA 2	ROCKET BODY	426	US	29 SEP	105.4	80.47	1031	1000	
B ALPHA 3	METAL OBJECT	510	US	29 SEP	105.4	80.52	1028	997	
B ALPHA 4	METAL OBJECT	511	US	29 SEP	105.5	80.44	1043	993	
B GAMMA 1	EXPLORER 14	432	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED				
B GAMMA 2#	ROCKET BODY	NNA	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED				
B ETA 1	RANGER 5	439	US	18 OCT	HELIOCENTRIC ORBIT				
B ETA 2	ROCKET RANGE	440	US	18 OCT	HELIOCENTRIC ORBIT				
B KAPPA 1		444	US	26 OCT	124.2	71.48	3549	185	
B LAMBDA 1	EXPLORER 15	445	US	27 OCT	311.5	18.04	17371	307	
B LAMBDA 2#	ROCKET BODY	NNA	US	27 OCT	INSUFFICIENT OBSERVATIONS				
B MU 1	ANNA 1B	446	US	31 OCT	107.9	50.15	1183	1077	\$162\$324

\$136.591\$136.078

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCL- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1962 LAUNCHES (CON'D)									
B MU 2	ROCKET BODY	447	US	31 OCT	107.6	50.21	1161	1072	
B NU 3		450	USSR	1 NOV	HELIOCENTRIC ORBIT				
B TAU 1		502	US	13 DEC	104.5	70.33	1712	227	
B TAU 2	INJUN 3	504	US	13 DEC	110.2	70.33	2239	234	
B TAU 4		508	US	13 DEC	95.9	70.30	905	214	
B TAU 5		513	US	13 DEC	104.4	70.31	1697	226	
B TAU 6		520	US	13 DEC	109.1	70.30	2125	241	
B UPSILON 1	RELAY 1	503	US	13 DEC	185.1	47.54	7439	1319	
B UPSILON 2	ROCKET BODY	515	US	13 DEC	184.8	47.53	7422	1319	\$136.140;136.621
B CHI 1	EXPLORER 16	506	US	16 DEC	104.4	52.09	1172	757	
B PSI 1	TRANSIT 5A	509	US	19 DEC	99.1	90.66	737	694	
B PSI 2		514	US	19 DEC	97.6	90.77	723	569	
B PSI 3		519	US	19 DEC	99.1	90.66	739	691	
B PSI 4		523	US	19 DEC	100.2	90.52	842	694	
1963 LAUNCHES									
1963 03A		527	US	16 JAN	94.4	81.88	521	459	
1963 04A	SYNCOM 1	553	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED				
1963 04B	ROCKET BODY	532	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED				
1963 05A		533	US	19 FEB	97.7	100.48	797	499	
1963 05B		534	US	19 FEB	97.7	100.50	796	502	
1963 05C		535	US	19 FEB	96.8	100.50	735	476	
1963 05D		536	US	19 FEB	98.3	100.47	846	511	
1963 08B		566	USSR	2 APR	BARYCENTRIC ORBIT				
1963 09A	EXPLORER 17	564	US	3 APR	93.5	57.63	646	244	
1963 13A	TELSTAR 2	573	US	7 MAY	225.3	42.77	10811	962	

OBJECTS IN ORBIT

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1963 LAUNCHES (CONT'D)									
1963 13B	ROCKET BODY	575	US	7 MAY	225.1	42.77	10790	966	
1963 14A		574	US	9 MAY	166.4	87.39	3678	3613	
1963 14B		579	US	9 MAY	166.4	87.32	4126	3166	
1963 14C		608	US	9 MAY	166.4	87.34	3688	3603	
1963 14D	TIROS 7 ROCKET BODY METAL OBJECT METAL OBJECT RESEARCH SATELLITE FOR GEOPHYSICS	589	US	9 MAY	CURRENT	ELEMENTS NOT MAINTAINED			
1963 14E		602	US	9 MAY	166.1	87.35	3653	3610	
1963 14F		628	US	9 MAY	166.8	87.34	3670	3652	
1963 14G		629	US	9 MAY	166.4	87.33	3705	3585	
1963 14H		702	US	9 MAY	166.4	87.33	3672	3618	
1963 22A		594	US	16 JUN	99.7	90.02	761	728	\$150\$400
1963 22B		603	US	16 JUN	99.7	90.01	759	731	
1963 22C		610	US	16 JUN	101.2	90.20	891	742	
1963 22D		611	US	16 JUN	98.1	89.79	769	569	
1963 24A		604	US	19 JUN	97.4	58.26	649	622	\$136.233\$136.924
1963 24B	RESEARCH SATELLITE FOR GEOPHYSICS	605	US	19 JUN	97.3	58.28	646	616	
1963 24C		606	US	19 JUN	97.9	58.35	682	632	
1963 24D		607	US	19 JUN	96.9	58.11	645	573	
1963 25B		614	US	27 JUN	132.1	82.17	4094	335	
1963 26A		612	US	28 JUN	102.0	49.77	1293	413	
1963 27A		613	US	29 JUN	94.6	82.33	520	484	
1963 30A		622	US	18 JUL	167.8	88.48	3732	3673	
1963 30B		635	US	18 JUL	156.7	89.48	4001	3299	
1963 30C		630	US	18 JUL	167.5	88.42	3719	3657	
1963 30D		624	US	18 JUL	167.5	88.05	4515	2863	
1963 30E		631	US	18 JUL	168.3	88.45	3781	3658	



OBJECTS IN ORBIT

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<b>1963 LAUNCHES (CONT'D)</b>									
1963 31A	SYNCOM 2	634	US	26 JUL	1436.0	31.78	35810	35759	\$136.467\$136.980 \$1814.069 \$1815.794. \$1820.177
1963 31B	ROCKET BODY	625	US	26 JUL	CURRENT	ELEMENTS NOT MAINTAINED			
1963 38A		669	US	28 SEP	107.1	89.92	1110	1077	
1963 38B		670	US	28 SEP	107.4	89.91	1136	1075	
1963 38C		671	US	28 SEP	107.3	89.91	1141	1068	
1963 38D		672	US	28 SEP	107.3	89.97	1138	1071	
1963 38E	POLYOT 1	745	US	28 SEP	107.1	89.93	1104	1082	
1963 39A		674	US	17 OCT	6481.3	37.97	116742	100803	
1963 39B		675	US	17 OCT	CURRENT	ELEMENTS NOT MAINTAINED			
1963 39C		692	US	17 OCT	6512.3	37.02	115029	103251	
1963 43A		683	USSR	1 NOV	102.2	58.95	1388	341	
1963 43B	EXPLORER 18 CENTAUR 2	684	USSR	1 NOV	98.9	58.64	1079	325	
1963 43C		685	USSR	1 NOV	91.8	58.96	449	268	
1963 43D		686	USSR	1 NOV	98.7	59.85	1057	332	
1963 46A		693	US	27 NOV	5610.7	35.20	192042	4385	
1963 47A		694	US	27 NOV	107.8	30.36	1775	472	
1963 47B	CENTAUR 2	696	US	27 NOV	107.2	30.05	1615	579	
1963 47C		697	US	27 NOV	107.5	30.06	1637	577	
1963 47D		698	US	27 NOV	108.0	29.91	1658	610	
1963 47E		699	US	27 NOV	108.6	30.43	1744	578	
1963 47F		700	US	27 NOV	108.6	30.45	1748	577	
1963 47G	CENTAUR 2	701	US	27 NOV	107.8	29.98	1643	607	
1963 47H		739	US	27 NOV	105.9	30.38	1587	483	
1963 49A		703	US	5 DEC	106.8	89.95	1095	1064	
1963 49B		704	US	5 DEC	107.1	89.95	1122	1068	\$150\$400

OBJECTS IN ORBIT

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<b>1963 LAUNCHES (CONT'D)</b>									
1963 49C		705	BS	5 DEC	107.1	89.95	1120	1068	
1963 49D		706	US	5 DEC	107.1	89.96	1114	1069	
1963 49E		715	US	5 DEC	107.1	89.99	1115	1071	
1963 49F		753	US	5 DEC	107.1	89.96	1122	1067	
1963 53A	EXPLORER 19	714	US	19 DEC	115.2	78.65	2299	629	
1963 53B		721	US	19 DEC	115.8	78.65	2398	592	
1963 53C		722	US	19 DEC	115.8	78.64	2381	601	
1963 53D		723	US	19 DEC	115.8	78.66	2390	599	
1963 53E		724	US	19 DEC	115.9	78.69	2385	610	
1963 53F		725	US	19 DEC	115.8	78.71	2365	616	
1963 53G		726	US	19 DEC	115.8	78.61	2381	600	
1963 53H		732	US	19 DEC	115.8	78.59	2374	611	
1963 54A	TIROS 8	716	US	21 DEC	99.4	58.55	752	704	\$136.231\$136.924
1963 54B		717	US	21 DEC	99.3	58.54	743	706	
1963 54C		720	US	21 DEC	101.1	58.49	923	696	
1963 54D		736	US	21 DEC	97.7	58.53	713	582	
<b>1964 LAUNCHES</b>									
1964 01A		727	US	11 JAN	103.4	69.94	933	912	
1964 01B	GGSE	728	US	11 JAN	103.4	69.92	933	913	
1964 01C	EGRS 1	729	US	11 JAN	103.4	69.93	938	907	136.805
1964 01D	SOLAR RAD.	730	US	11 JAN	103.5	69.93	935	910	136.886
1964 01E		731	US	11 JAN	103.5	69.93	935	911	
1964 02A		733	US	19 JAN	101.3	99.10	851	790	
1964 02B		734	US	19 JAN	101.3	99.10	833	806	
1964 02C		735	US	19 JAN	101.3	99.10	834	809	
1964 03A	RELAY 2	737	US	21 JAN	194.7	46.31	7416	2083	136.620\$136.142

# OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLIN- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1964 LAUNCHES (CONT'D)									
1964 03B		738	US	21 JAN	194.8	46.31	7423	2082	
1964 04A	ECHO 2	740	US	25 JAN	108.2	81.50	1302	982	136.019; 136.170
1964 04B		741	US	25 JAN	108.9	81.51	1310	1045	
1964 04C		742	US	25 JAN	108.8	81.49	1308	1041	
1964 04D		743	US	25 JAN	108.8	81.54	1317	1036	
1964 04E		749	US	25 JAN	94.5	81.56	705	283	
1964 05A	SATURN 5	744	US	25 JAN	92.2	31.45	498	246	
1964 06A	ELEKTRON 1	746	USSR	30 JAN	169.3	60.97	7106	410	
1964 06B	ELEKTRON 2	748	USSR	30 JAN	1356.3	58.46	66937	1485	
1964 06C		750	USSR	30 JAN	167.9	60.83	6995	415	
1964 06D		751	USSR	30 JAN	1384.1	58.48	67973	1553	
1964 11A		759	US	28 FEB	94.5	82.07	511	485	
1964 15A	ARIEL 2	771	US/UK	27 MAR	99.7	51.68	1203	280	136.557
1964 15B		775	US	27 MAR	98.9	51.70	1125	278	
1964 15C		847	US	27 MAR	103.3	51.35	1453	368	
1964 16D		785	USSR	2 APR	HELIOCENTRIC ORBIT				
1964 19B	POLYOT 2	784	USSR	12 APR	91.3	58.09	397	281	
1964 26A		801	US	4 JUN	103.1	90.50	953	857	\$150\$400
1964 26B		805	US	4 JUN	103.9	90.22	981	903	
1964 26C		806	US	4 JUN	102.3	90.86	952	785	
1964 26D		809	US	4 JUN	103.1	90.51	953	857	
1964 31A		812	US	18 JUN	101.6	99.75	840	829	
1964 31B		813	US	18 JUN	101.6	99.76	842	828	
1964 31C		815	US	18 JUN	101.6	99.78	847	821	
1964 35A		824	US	2 JUL	94.8	82.09	528	494	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
<u>1964 LAUNCHES (CONT'D)</u>									
1964 38A	ELECKTRON 3	829	USSR	10 JUL	168.1	60.88	7018	406	
1964 38B	ELECKTRON 4	830	USSR	10 JUL	1313.9	59.16	65720	998	
1964 38C		831	USSR	10 JUL	168.4	60.89	7057	389	
1964 38D		832	USSR	10 JUL	1341.3	59.29	66827	995	
1964 40A		836	US	17 JUL	6024.8	39.08	104101	102500	
1964 40B		837	US	17 JUL	6004.3	40.75	114000	92103	
1964 40C		838	US	17 JUL	2349.0	38.30	103985	319	
1964 41B		843	US	28 JUL	BARYCENTRIC ORBIT				
1964 45B		851	US	14 AUG	126.4	95.70	3660	273	\$136.470\$136.980
1964 47A	SYNCOM 3	858	US	19 AUG	1436.2	.10	35792	35784	\$1820.177\$1815.794
									\$1814.931
1964 47B		862	US	19 AUG	CURRENT ELEMENTS NOT MAINTAINED				
1964 49D	COSMOS 41	869	USSR	22 AUG	714.4	66.06	39343	790	
1964 49E		898	USSR	22 AUG	718.3	65.95	39856	525	
1964 50A	COSMOS 42	864	USSR	22 AUG	92.4	48.91	561	213	
1964 50C	COSMOS 43	867	USSR	22 AUG	92.5	49.00	553	233	
1964 51A	EXPLORER 20	870	US	25 AUG	103.9	79.92	1023	867	\$136.326\$136.350
1964 51B		871	US	25 AUG	103.9	79.92	1016	868	\$136.680
1964 51C		873	US	25 AUG	103.4	79.83	990	848	
1964 51D		874	US	25 AUG	103.4	79.85	1044	795	
1964 51E		875	US	25 AUG	103.4	79.84	1054	789	
1964 52A	NIMBUS 1	872	US	28 AUG	98.3	98.67	928	427	
1964 52B		878	US	28 AUG	98.3	98.68	937	421	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCL- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1964 LAUNCHES (CONT'D)									
1964 53A	COSMOS 44	876	USSR	28 AUG	99.5	65.10	873	599	
1964 53B		877	USSR	28 AUG	99.6	65.11	812	667	
1964 54A	OGO 1	879	US	5 SEP	3841.9	40.72	144824	4930	\$136.200\$400.250 \$400.850
1964 60A	EXPORER 21	889	US	4 OCT	2080.3	33.72	94288	917	136.147
1964 63A		893	US	6 OCT	106.3	89.92	1080	1035	
1964 63B		897	US	6 OCT	106.6	89.91	1088	1053	
1964 63C		900	US	6 OCT	106.6	89.94	1088	1050	
1964 63D		901	US	6 OCT	106.6	89.92	1087	1056	
1964 63E		902	US	6 OCT	106.6	89.92	1086	1056	
1964 63F		903	US	6 OCT	106.6	89.92	1087	1056	
1964 64A	EXPLORER 22	899	US	10 OCT	104.8	79.72	1078	890	\$136.171\$162\$324 \$20\$40\$41\$360
1964 64B		907	US	10 OCT	104.7	79.72	1080	888	
1964 64C		976	US	10 OCT	104.1	79.36	1058	844	
1964 64D		977	US	10 OCT	105.5	80.06	1110	927	
1964 72A		922	US	4 NOV	94.9	82.02	525	508	
1964 72B		925	US	4 NOV	94.8	82.06	520	499	
1964 72C		926	US	4 NOV	94.3	82.07	487	482	
1964 72D		927	US	4 NOV	94.3	82.04	486	486	
1964 73A	MARINER 3	923	US	5 NOV	HELIOCENTRIC ORBIT				
1964 74A	EXPLORER 23	924	US	6 NOV	99.2	51.96	977	463	\$136.078\$136.861
1964 76A	EXPLORER 24	931	US	21 NOV	115.6	81.39	2381	591	136.709
1964 76B	EXPLORER 25	932	US	21 NOV	116.2	81.39	2491	533	\$136.292\$126.860
1964 76C		933	US	21 NOV	116.2	81.40	2497	529	
1964 76D		934	US	21 NOV	116.1	81.33	2469	540	
1964 76E		935	US	21 NOV	116.3	81.41	2496	532	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1964 LAUNCHES (CONT'D)									
1964 76F		936	US	21 NOV	115.7	81.32	2405	570	
1964 76G		937	US	21 NOV	116.3	81.35	2479	556	
1964 76H		939	US	21 NOV	115.3	81.33	2349	586	
1964 76I		940	US	21 NOV	116.1	81.44	2388	622	
1964 76J		941	US	21 NOV	116.2	81.45	2527	498	
1964 76K		960	US	21 NOV	116.4	81.38	2450	587	
1964 76L		1411	US	21 NOV	116.4	81.36	2486	550	
1964 77A	MARINER 4	938	US	28 NOV	HELIOCENTRIC ORBIT				
1964 77B		942	US	28 NOV	HELIOCENTRIC ORBIT				
1964 78C	ZOND 2	945	USSR	30 NOV	HELIOCENTRIC ORBIT				
1964 80A	COSMOS 51	947	USSR	9 DEC	90.2	48.77	318	233	
1964 83A		953	US	13 DEC	106.0	89.97	1068	1018	
1964 83B		956	US	13 DEC	106.3	90.00	10908	1015	
1964 83C		959	US	13 DEC	106.3	89.98	1090	1025	136.650\$162\$324
1964 83D		965	US	13 DEC	106.3	89.98	1089	1025	\$150\$400
1964 83E		966	US	13 DEC	106.3	89.99	1085	1029	
1964 83F		967	US	13 DEC	106.3	89.99	1092	1021	
1964 83G		1099	US	13 DEC	106.3	89.99	1087	1027	
1964 83H		1528	US	13 DEC	106.3	90.00	1088	1027	
1964 83J		1608	US	13 DEC	106.3	89.98	1087	1027	
1964 86A	EXPLORER 26	936	US	21 DEC	453.1	19.93	26063	260	136.273
1965 LAUNCHES									
1965 03A		973	US	19 JAN	97.6	98.72	832	460	
1965 04A	TIROS 9	978	US	22 JAN	119.2	96.39	2583	706	\$136.234\$136.198
1965 04B		979	US	22 JAN	119.3	96.42	2599	701	
1965 04C		1312	US	22 JAN	118.0	96.27	2513	674	
1965 04D		1313	US	22 JAN	120.4	96.37	2659	739	
1965 06A	COSMOS 53	983	USSR	30 JAN	96.3	48.72	941	214	

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1965 LAUNCHES (CONT'D)									
1965 06B		984	USSR	30 JAN	94.1	48.76	720	209	
1965 07A	ORB. SOL. OBS. 2	987	US	3 FEB	96.5	32.84	627	549	136.713
1965 07B		988	US	3 FEB	96.5	32.85	635	547	
1965 08A		1000	US	11 FEB	145.6	32.12	2797	2781	
1965 08B		1001	US	11 FEB	145.4	32.13	2795	2761	
1965 08C		1002	US	11 FEB	145.7	32.12	2807	2778	
1965 09A	PEGASUS 1	1085	US	16 FEB	97.0	31.75	723	503	\$136.410; 136.890
1965 09B		1088	US	16 FEB	97.1	31.74	734	499	
1965 10B		1087	US	17 FEB	BARYCENTRIC ORBIT				
1965 11A	COSMOS 54	1089	USSR	21 FEB	104.1	56.07	1649	256	
1965 11B	COSMOS 55	1090	USSR	21 FEB	104.2	55.06	1645	270	
1965 11C	COSMOS 56	1091	USSR	21 FEB	103.3	56.07	1566	263	
1965 11D		1092	USSR	21 FEB	105.8	56.09	1778	284	
1965 11E		1094	USSR	21 FEB	99.4	56.05	1189	252	
1965 14A	COSMOS 58	1097	USSR	26 FEB	96.8	65.06	639	571	
1965 14B		1098	USSR	26 FEB	96.9	65.07	693	526	
1965 16A	GREB	1271	US	9 MAR	103.5	70.09	941	910	
1965 16B	GRAVITY GRADIENT II	1244	US	9 MAR	103.5	70.09	941	909	
1965 16C	GRAVITY GRADIENT III	1292	US	9 MAR	103.5	70.09	943	907	136.766
1965 16D	SOLAR RAD.	1291	US	9 MAR	103.5	70.09	942	908	136.800
1965 16E	EGRS III	1208	US	9 MAR	103.5	70.10	941	907	136.840
1965 16F	OSCAR III	1293	US	9 MAR	103.5	70.11	946	903	
1965 16G	SURCAL	1310	US	9 MAR	103.5	70.11	943	904	
1965 16H	DODECAHEDRON	1272	US	9 MAR	103.5	70.10	941	908	
1965 16J	ROCKET BODY	1245	US	9 MAR	103.5	70.13	940	907	
1965 17B	EGRS II	1250	US	11 MAR	97.5	89.98	995	284	
1965 17C		1228	US	11 MAR	97.3	89.98	977	282	
1965 17D		1248	US	11 MAR	97.3	90.00	976	285	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCL- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1965 LAUNCHES (CONT'D)									
1965 17H		1323	US	11 MAR	93.7	89.97	654	256	
1965 20A	COSMOS 61	1267	USSR	15 MAR	104.1	56.00	1642	261	
1965 20B	COSMOS 62	1268	USSR	15 MAR	104.1	56.05	1643	260	
1965 20C	COSMOS 63	1269	USSR	15 MAR	103.3	56.05	1560	269	
1965 20D-20EB***			USSR	15 MAR					
1965 21A		1273	US	18 MAR	97.5	99.01	759	525	
1965 21C		1289	US	18 MAR	97.5	99.01	759	526	
1965 21E		1376	US	18 MAR	96.4	98.96	650	528	
1965 21F		1463	US	18 MAR	98.6	99.06	869	520	
1965 23B		1298	US	21 MAR	BARYCENTRIC ORBIT				
1965 27A		1314	US	3 APR	111.5	90.20	1320	1275	
1965 27B	EGRS IV	1315	US	3 APR	111.4	90.22	1321	1268	
1965 27C		1316	US	3 APR	111.5	90.24	1323	1270	
1965 27D		1389	US	3 APR	111.5	90.22	1318	1277	
1965 27E		1399	US	3 APR	111.5	90.21	1312	1282	
1965 28A	EARLY BIRD	1317	US	6 APR	1437.3	.13	36596	35025	
1965 28B	ROCKET BODY	1318	US	6 APR	CURRENT ELEMENTS NOT MAINTAINED				
1965 30A	MOLNIA 1	1324	USSR	23 APR	720.5	65.21	39839	651	
1965 31B		1329	US	28 APR	95.1	95.21	548	502	
1965 31G		1357	US	28 APR	94.5	95.18	500	489	
1965 32A	EXPLORER 27	1328	US	29 APR	107.8	41.17	1314	937	\$137.740\$162\$324 \$20\$40\$41\$360
1965 32B		1358	US	29 APR	107.8	41.17	1314	936	
1965 34A		1359	US	6 MAY	157.0	32.12	3737	2786	
1965 34B		1360	US	6 MAY	309.9	32.10	14797	2785	
1965 34C		1361	US	6 MAY	145.6	32.13	2800	2775	
1965 38A		1377	US	20 MAY	100.0	98.61	960	559	
1965 38B		1378	US	20 MAY	100.0	98.61	962	559	
1965 38C		1379	US	20 MAY	99.9	98.62	953	561	
1965 38D		1380	US	20 MAY	99.2	98.78	896	542	
1965 38E		1461	US	20 MAY	101.0	98.62	1047	564	
1965 38F		1462	US	20 MAY	98.9	98.58	864	555	



OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1965 LAUNCHES (CONT'D)									
1965 38G		1475	US	20 MAY	100.1	98.54	993	541	
1965 39A	PEGASUS 2	1381	US	25 MAY	97.2	31.76	734	508	\$136.410;136.889
1965 39B	ROCKET BODY	1385	US	25 MAY	97.2	31.76	737	510	
1965 42A	EXPLORER 28	1388	US	29 MAY	8558.8	33.86	264247	196	136.125
1965 44A	LUNIK 6	1393	USSR	18 JUN	HELIOCENTRIC ORBIT				
1964 48A		1420	US	24 JUN	106.9	89.98	1142	1028	
1965 48B		1425	US	24 JUN	106.9	89.99	1139	1029	
1965 48C		1428	US	24 JUN	106.6	89.98	1114	1026	
1965 48D		1435	US	24 JUN	106.9	90.00	1142	1030	
1965 50A		1422	US	25 JUN	94.6	107.65	508	496	
1965 50D		1427	US	25 JUN	93.6	107.64	452	443	
1965 51A	TIROS 10	1430	US	2 JUL	100.7	98.61	841	741	\$136.232 \$136.924
1965 51B		1433	US	2 JUL	100.7	98.64	844	744	
1965 51C		1440	US	2 JUL	99.3	98.51	842	614	
1965 51D		1529	US	2 JUL	102.0	98.73	886	825	
1965 52A	COSMOS 70	1431	USSR	2 JUL	97.7	48.75	1068	223	
1965 52B		1432	USSR	2 JUL	97.1	48.74	1002	233	
1965 53A	COSMOS 71	1441	USSR	16 JUL	95.3	56.05	546	517	
1965 53B	COSMOS 72	1442	USSR	16 JUL	95.9	56.06	580	546	
1965 53C	COSMOS 73	1443	USSR	16 JUL	95.6	56.07	550	544	
1965 53D	COSMOS 74	1444	USSR	16 JUL	96.2	56.04	610	546	
1965 53E	COSMOS 75	1445	USSR	16 JUL	96.5	56.03	637	547	
1965 53F		1448	USSR	16 JUL	96.6	56.12	642	548	
1965 53G		1449	USSR	16 JUL	95.1	56.05	545	504	
1965 53H		1473	USSR	16 JUL	96.7	56.07	654	547	
1965 55A		1447	US	17 JUL	94.4	70.19	510	473	
1965 55B		1452	US	17 JUL	94.1	70.17	493	462	
1965 55C		1455	US	17 JUL	94.4	70.18	507	472	
1965 56A	ZOND 3	1454	USSR	18 JUL	HELIOCENTRIC ORBIT				
1965 58A		1458	US	20 JUL	6679.0	35.34	115839	106367	
1965 58B		1459	US	20 JUL	6712.7	34.95	121281	101715	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLIN- ATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1965 LAUNCHES (CONT'D)									
1965 58C		1460	US	20 JUL	2610.6	34.39	112694	153	136.768
1965 59A		1464	USSR	23 JUL	91.8	48.78	471	251	
1965 59B		1465	USSR	23 JUL	91.2	48.78	409	252	
1965 60A	PEGASUS 3	1467	US	30 JUL	95.2	28.87	534	514	\$136.410;136.590
1965 60B		1468	US	30 JUL	95.2	28.86	536	518	
1965 62B		1472	US	3 AUG	94.7	107.36	509	503	
1965 63A	EGRS 5	1502	US	10 AUG	122.2	69.24	2426	1137	
1965 63B		1506	US	10 AUG	122.2	69.25	2428	1134	
1965 64A	CENTAUR 6	1503	US	11 AUG	CURRENT ELEMENTS NOT MAINTAINED				
1965 65A		1504	US	13 AUG	107.9	90.02	1134	1089	
1965 65B		1508	US	13 AUG	107.8	90.04	1162	1088	
1965 65C		1510	US	13 AUG	108.1	90.02	1197	1081	
1965 65D		1511	US	13 AUG	108.1	90.04	1195	1085	
1965 65E		1512	US	13 AUG	108.1	90.03	1197	1084	
1965 65F		1514	US	13 AUG	108.1	90.03	1200	1084	
1965 65G		1515	US	13 AUG	108.1	90.01	1195	1083	
1965 65H		1520	US	13 AUG	108.1	90.04	1198	1084	
1965 65J		1521	US	13 AUG	108.1	90.00	1198	1082	
1965 65K		1522	US	13 AUG	108.1	90.04	1201	1082	
1965 65L		1577	US	13 AUG	108.1	90.03	1203	1080	
1965 70A	COSMOS 80	1570	USSR	3 SEP	115.0	56.05	1551	1357	
1965 70B	COSMOS 81	1571	USSR	3 SEP	115.3	56.05	1555	1387	
1965 70C	COSMOS 82	1572	USSR	3 SEP	115.7	56.06	1561	1411	
1965 70D	COSMOS 83	1573	USSR	3 SEP	116.1	56.05	1567	1441	
1965 70E	COSMOS 84	1574	USSR	3 SEP	116.4	56.06	1574	1467	
1965 70F		1575	USSR	3 SEP	114.6	56.19	1514	1360	
1965 72A		1580	US	10 SEP	101.9	98.66	1053	651	
1965 72B		1581	US	10 SEP	101.6	98.53	1014	658	
1965 72C		1582	US	10 SEP	101.9	98.66	1056	645	
1965 72D		1583	US	10 SEP	101.9	98.62	1052	652	
1965 73A	COSMOS 86	1584	USSR	18 SEP	115.1	56.06	1641	1276	
1965 73B	COSMOS 87	1585	USSR	18 SEP	115.5	56.06	1650	1303	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCL I- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1965 LAUNCHED (CONT'D)									
1965 73C	COSMOS 88	1586	USSR	18 SEP	115.8	56.05	1663	1324	
1965 73D	COSMOS 89	1587	USSR	18 SEP	116.3	56.05	1676	1348	
1965 73E	COSMOS 90	1588	USSR	18 SEP	116.7	56.05	1687	1375	
1965 73F		1589	USSR	18 SEP	116.8	56.08	1698	1375	
1965 73G		1590	USSR	18 SEP	116.5	56.10	1674	1374	
1965 73H		1591	USSR	18 SEP	116.7	56.04	1690	1375	
1965 73J		1617	USSR	18 SEP	117.5	56.12	1757	1382	
1965 73K		1618	USSR	18 SEP	117.7	56.17	1764	1392	
1965 78A		1613	US	5 OCT	125.7	144.31	3454	412	
1965 78B		1616	US	5 OCT	125.7	144.31	3450	412	
1965 79A		1615	US	5 OCT	89.7	75.03	311	202	
1965 80A	MOLNIYA II	1621	USSR	13 OCT	91.3	64.81	467	207	
1965 80B		1619	USSR	13 OCT	91.1	64.84	458	199	
1965 81A	OGO 2	1620	US	14 OCT	104.3	87.36	1510	414	\$136.200\$400.250 \$400.850

# DECAYED OBJECTS (CONTINUED)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1965 20AL		1400	USSR	MAR 15	5 OCT 65
1965 20DG		1560	USSR	MAR 15	13 OCT 65
1965 21B		1288	US	MAR 18	5 OCT 65
1965 21D		1290	US	MAR 18	1 OCT 65
1965 54A	PROTON 1	1466	USSR	JUL 16	11 OCT 65
1965 67A		1513	US	AUG 17	11 OCT 65
1965 74A		1602	US	SEP 22	11 OCT 65
1965 75A	COSMOS 91	1603	USSR	SEP 23	1 OCT 65
1965 75B		1604	USSR	SEP 23	4 OCT 65
1965 76A		1609	US	SEP 30	5 OCT 65
1965 76B		1614	US	SEP 30	3 OCT 65
1965 77A	LUNA 7	1610	USSR	OCT 4	7 OCT 65
1965 77B		1611	USSR	OCT 4	4 OCT 65
1965 77C		1612	USSR	OCT 4	5 OCT 65

\* APHELION PERIHELION IN ASTRONOMICAL UNITS, INCLINATION TO ECLIPTIC.  
 \*\* TWO HUNDRED AND SIX METAL OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED  
 WITH 1961 OMICRON 1 and 1961 OMICRON 2. OBJECTS OF THIS SERIES THAT HAVE DECAYED  
 CAN BE FOUND IN THE DECAYED OBJECTS LISTS.  
 \*\*\* ONE HUNDRED AND NINETEEN OBJECTS HAVE BEEN IDENTIFIED AS **HAVING** LAUNCHED  
 WITH 1965 20A, 1965 20B and 1965 20C. OBJECTS OF THIS SERIES THAT HAVE DECAYED  
 CAN BE FOUND IN THE DECAYED OBJECTS LIST.  
 § TRANSMITTING ON COMMAND ONLY.  
 & TRANSMITTING WHEN IN SUNLIGHT ONLY.  
 # NO CATALOGUE NUMBER ASSIGNED.